

ABSTRACT OF THE DISCLOSURE

This invention relates to a heat driven acoustic orifice type pulse tube cryocooler for installing metal knit within a driving section cooling a driving gas of an application device using a principle of high temperature superconductivity, and then
5 homogeneously heating the driving gas by way of premixed combustion. To do this, the inventive cryocooler comprises a driver generating a flame radiating heat having a predetermined temperature, homogeneously heating a driving gas, and adiabatically compressing the driving gas so that the driving gas generates an acoustic having a predetermined frequency; a regenerator receiving the driving gas output from the driver,
10 and cooling the driving gas; a pulse tube receiving the cold driving gas output from the generator, adiabatically compressing the driving gas, and generating the driving gas having a high temperature; a cold reservoir receiving the high temperature driving gas output from the pulse tube, and adiabatically expanding the driving gas; a first hot heat exchanger installed between the generator and the pulse tube, and exchanging heat
15 with the outside; a cold heat exchanger installed between the pulse tube and the cold reservoir, and exchanging heat with the outside; and an orifice installed within the cold reservoir, the orifice controlling an amount of the driving gas running between the cold reservoir and the pulse tube to constantly maintain a pressure of the cold reservoir. Wherein the driving gas repeats the process of the compression and expansion
20 centering around the pulse tube.